

# Milan rural metropolis. A project for the enhancement of waters towards the neo-ruralisation of territorial system in Milan<sup>1</sup>

Mariella Borasio, Marco Prusicki

## 1. A shared strategy

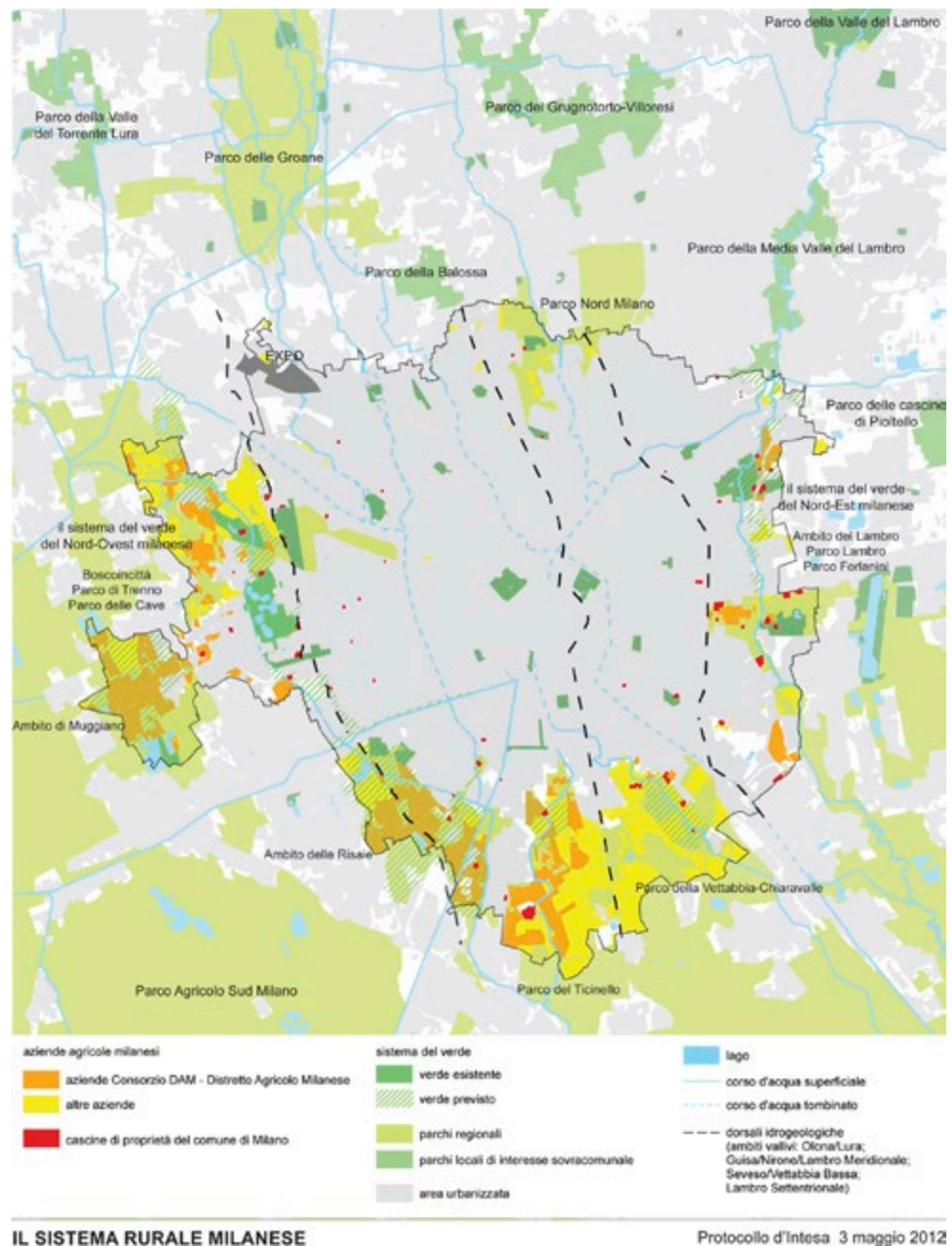
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ISSN 2284-242X (online)  
n. 2, 2014, pp. 135-146

The portion of the Po Valley we usually define as the Milan metropolitan region is a multi-millennial place of human settlements due to the extraordinary abundance of water, in the surface and underground, which make it one of the most fertile plains in the world, seat of hydraulic civilisations that represent a tangible and intangible heritage among the most significant at a global level.<sup>2</sup>

In the different stages of civilisation, moments of enhancement of the extraordinary water resources have been followed by moments of degradation, but, on the whole, agriculture in the Milanese tradition has been characterised as a multifunctional activity able to generate extraordinary agricultural landscapes. A genuine 'art' of cultivation and care of the place celebrating the primary matrix of so much wealth: waters (CORSANI 2010). The twentieth century is certainly a stage in which the migration of part of the rural population towards industrial and tertiary activities concurred to determine the current vulnerability of the territorial system and the apparent degradation of water resources in the Milanese region (CONSONNI, TONON 2001). Waters and soils have been severely impacted by this settlement change, which is both social and cultural, but the partial abandonment of agricultural practices, which in the past century has led to a deterioration related to the decay of the continuous monitoring and maintenance of the entire settlement system, currently shows signs of a turnaround: the increasing consolidation of the Milan agricultural districts may certainly be read as an indicator of the persistence of a value attribution to the genuine Milanese agricultural tradition, characterised since the Middle Ages by a close vicinity relationship of its main "propelling actors", which is to say "the city of Milan [...], religious and monastic centres, and business farmhouses" (BELTRAME 2000, 28).

<sup>1</sup> Translation from Italian by Angelo M. Cirasino.

<sup>2</sup> "There is no agriculture in the world having, in such limited space, such abundance of perennial waters, nor so much vastness of the plain to spread them on" (CATTANEO 1841, 169). "And here we see how important is even the steep slope of our plain, and the great altitude at which lakes are placed along its top edge [...] while the lower edge follows the course of the river Po [...]. They are [...] like large vats, placed between mountains and plain, gathering in their depths the rushing waters, muddy or icy, to decant them, clear and continuous, in the rivers. The *Navigli*, canals carved in the high banks of these, collect the most regular and constant part of waters, support it and guide it out of the valleys, on the surface of the plateau, which seems to lean to receive them. Another part of the lakes water, filtering through the underground gravel, goes to flow by itself in the Fountains, whence the farmer with gentle slope leads it to the underlying prairies, which, under the veil of those placid and tepid perennials waters, are kept green even in winter. [...] All things that produce large natural differences between Lombardy and other countries, which are in the same conditions as for latitude, altitude and exposure" (CATTANEO 1841, 163-164).



**Figura 1.** Il sistema rurale milanese (Distretto Agricolo Milanese, elaborazione di Valentina Dotti, maggio 2012).

The Milan region seems to express again a settlement model in which water and land, in innovative ways, produce a stage of civilisation combining healthy and safe food (PETRINI, PADOVANI 2005), renewable energy, landscape/environmental quality, protection of biodiversity, fruition opportunities for urban/rural areas, patrimonial enhancement (FERRARESI 2009). This new condition already begins generating an urban/rural landscape in which the enhancement of patrimonial resources tends to change the criticality gradient in the deterioration of landscape and environment (PRUSICKI 2008) in the several situations of the territories affected by this transformation.<sup>3</sup>

<sup>3</sup> In addition to the ongoing implementation of urban agricultural Parks in Milan (e.g. Vettabbia, Ticinello, Cave, etc.), and to the increasing consolidation of the projects of "Parchi Locali di Interesse Sovracomunale"

It's increasingly widespread the opinion that, to reverse the flow of urbanisation, it's necessary to develop agricultural services and functions apt to ensure food security and sovereignty in landscapes where common goods are valued enhancing, at the same time, the opportunities of 'contemplation' of water in Milan: the process of consolidation of agricultural production in the metropolitan area of Milan shows in the foreground exactly the need for a careful reorganisation of its unique water system, resulting from a project lasted two thousand years which, after having been a generator of an equally amazing process of civilisation, in less than a century has been almost completely cancelled by 'modernity', and is now suffering from criticalities, increasingly severe, mainly due to the escalating development of urbanisation as plainly outlined, already in the second half of the eighties of the last century, when the Ministry of Environment, with a resolution of 18 September 1987, identified the territories comprising the watersheds of the rivers Lambro, Seveso and Olona, as 'area with high risk of environmental crisis' (MAGNAGHI 1995).

## 2. A new project for the ancient water system in Milan

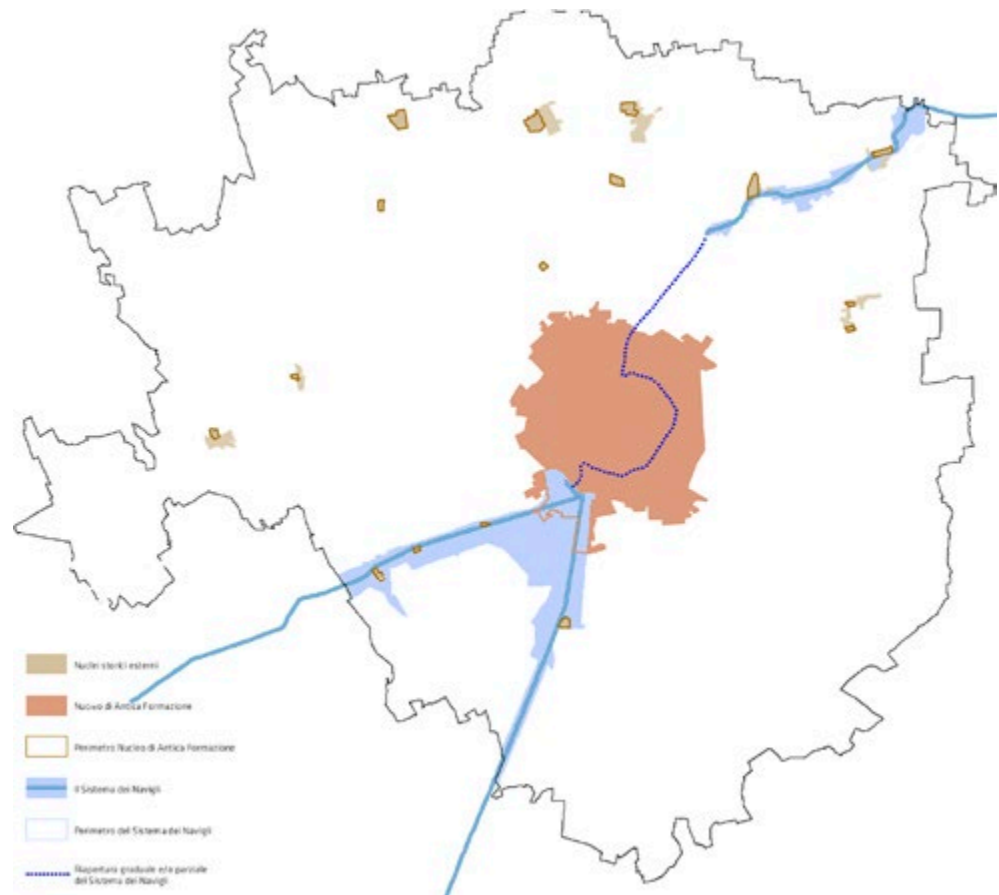
Currently a strategy is emerging, based on five key actions that need to be quickly systematised - and partly reformulated - to enhance their meaning as a form of revival of farming activities, also in view of the generation of new landscapes. The first of these actions concerns the reopening of the inner circle of canals, for which the recently approved Milan PGT plans to carry out a detailed feasibility study.<sup>4</sup> This is a momentous option of extraordinary importance, driven by a referendum with wide participation, which, after a century and a half, takes waters back at the heart of regeneration policies in urban/rural areas. If its historic and landscape/fruiting meaning is evident, the lower is the awareness of how much it constitutes also a unique opportunity to address the problems caused by the hydraulic discontinuity of the system caused by the suppression of the inner *Fossa* (INGOLD 2003) that has strongly contributed to the production and landscape crisis of a large part of the lower Milan area. To drive to a correct management of the canals waters in Milan, therefore, the feasibility study for the reactivation of the canals system should provide a restoration of the hydraulic continuity now compromised between the several elements of the system, bringing the waters of the Martesana Canal to feed the many outlets still openable along its urban path, and especially the Vettabbia Canal, the ancient 'flumen' (CHIAPPA MAURI 1990, 64), whose valley is the subject of a significant redevelopment project already partially in progress.<sup>5</sup>

("local Parks of over-municipal interest") that enhance water and agriculture (PLIS in Olona, Lura and Lambro valleys, etc.), in view of the Expo Milano 2015 several actions are scheduled for the consolidation of the agricultural landscape in the western portion of the Milan territory, in the Olona, Lura and southern Lambro valley areas (rearrangement of water network and trails in the agricultural sectors of Muggiano, rice paddies, etc.).

<sup>4</sup> See the Milan PGT ("*Piano di Governo del Territorio*", "territorial government plan", approved by the City Council on May 22nd, 2012, decision 16) - Planning Document, General Report, chapter 4.13 - 'Il fiume di Milano', p. 254.

<sup>5</sup> See the Vettabbia urban agricultural park, in progress as environmental compensation and mitigation work for the Milano-Nosedo depurator (PRUSICKI 2012, 163-169).

**Figura 2.** Il sistema dei Navigli milanesi con il tracciato della cerchia interna per la riapertura della quale il Comune di Milano ha avviato uno studio di fattibilità (tavola del Documento di piano, Relazione Generale, p.254).



The second action consists of the implementation of the project called “Waterways-Expo 2015”, addressing issues related to the exhibition site functions and territorial connections, which provides an inclusive program of measures aimed at the preservation and enhancement of open areas in the western sector of the Milan metropolitan city. The central element of the project will be the “Waterway”, an irrigation canal which will flow in the open for most of its path,<sup>6</sup> between the main Villoresi Canal and the Naviglio Grande, following where possible the tracks of secondary and tertiary canals existing or abandoned, adjusting and reconnecting elements of the existing water network, as part of a wider program of upgrading and rationalization of the network, as part of a wider programme for the redevelopment and optimisation of the network providing even a redevelopment of the Guisa creek with functions of hydraulic protection and improvement of the irrigation and fruition network in the Lura valley area. The project, even raising a lot of controversy,<sup>7</sup> will increase the capacity of Naviglio Grande in its Milan tract, and will help repairing the significant irrigation deficiencies for the agricultural territories south of the city.

<sup>6</sup> The new canal will be 2 to 2.5 cube meters/second in capacity, and will not result in an increase of the current derivations from Ticino (ACERBO, ROSSI 2012, 99).

<sup>7</sup> Among others, against the Waterway-Expo 2015 project were: the Organising Committee for the “MilanoSiMuove” referendum, the municipal council for the implementation of referendums, Legambiente, Italia Nostra, the Milan Radicals, the Milan and Lombardy 5 Stars Movement, the Association of Canals Friends.

The third action has the reconstruction of the Olona river valley as its goal (BORASIO 2011).<sup>8</sup>

The current arrangement of the valley is very different from the original, prior to the radical changes presumably made in the Roman age (POGGI 1911, 165-175). The natural basin of Olona, in fact, at present delivers water to river Po only underground, at the current confluence with Lower Olona in the municipality of San Zenone al Po. In ancient times its surface waters have been completely diverted towards the city of Milan, with benefits in terms of water supply, but with several obvious problems gradually increased in time, especially from the 60's of last century to the present. Surface water of Olona, so diverted, currently flow into South Lambro and, from this one, into North the Lambro flowing into the Po near the town of Orio Litta, thus conveying the entire load of the urban area of Milan and North-Milan into one single point with various, completely obvious problems.<sup>9</sup>

Considering the high criticality levels, including the environmental ones, of the present hydrographic arrangement, the design idea consists in a proposal for the reconnection of the water system in the valley area, including Higher Olona with Lower Olona and Po, achievable following the trails of the water courses palaeosols starting from the Rho node. The core of the project concerns that part of the 'cereal plain', in the western ambit of the Milan territory, still strongly marked by the ancient remnants of centuriation, whose traces are still persistent and very frequent, characterised in general by significant peculiarities, but also by high risk of landscape and environmental degradation due to the coexistence of multiple phenomena. It will enable the enhancement and redevelopment of existing waterways, an increased hydraulic safety, the creation of new green systems and, more importantly, the consolidation of urban and peri-urban agricultural landscapes in one of the most valuable agricultural landscapes in the entire Po territory, now undergoing a strong acceleration of the development dynamics, where the evolution trends, readable in reference both to many large transformation projects already in progress or underway, and to many

<sup>8</sup> The pilot action is being promoted by the Lombardy Region on the basis of: a) the results of regional studies developed from 1992 to 2010 in order to reverse the degradation of the area declared at high risk of environmental crisis in 1986, b) the strategic scenario study developed within the 2011 research "Identifying innovative methods of territorial enhancement applied to river areas - River Contracts", and c) the 2011 "Hydraulic preparatory study for the definition of the waterways design in the Olona-Bozzente-Lura-Guisa basin as part of the Expo 2015 event".

<sup>9</sup> In light of the ongoing analysis, considering the close correlation between the overall structure of the sub-basin and the quality of the related aquifers, all the water bodies in the Lambro-Olona sub-basin, in the river Po hydrographic district, could be classified as 'heavily modified'. The critical elements to be considered, related to a strong settlement pressure with a very high population density (double compared to the regional average) and the presence of a very complex economic and production structure, are mainly: 40% of the total flow made by civil or industrial waste; poor or very poor water quality along 58% of the water courses; 40% of the municipalities in the area subject to high or very high hydro-geological risks; high artificiality of the river beds; almost torrential fluvial regime, with abundant and concentrated rainfall and flood waves that cause frequent flooding, and modest if not scarce runoff at other times; end portions of the waterways strongly confined/culverted, with resulting inability to adapt beds to the increasing drain capacities and reduction of the flow capacity from upstream to downstream; waterways used as terminals for the urban runoff networks, with flow peaks concentrated in time and continuously rising, often far superior to those of the natural regime; deep changes of the physical-chemical-morphological properties directly resulting from the main uses of the water body; many critical issues due to the network inability to withstand the flood flows, with consequent risks of flooding for agricultural and/or urban areas identified in the General Plan for Drainage, irrigation and protection of rural territories; costs of the measures to be taken to achieve a 'good' - actual or potential - possibly exorbitant.



protection and enhancement policies not always coordinated, will lead to a substantial and long-lasting modification of its overall organisation.<sup>10</sup>

The proposed fluvial reconnection of Olona/Bozzente/Lura to Lower Olona and Po opens a historic opportunity to avert from the most critical Milan context part of there rivers' floods, returning waters, after more than a millennium, to their natural valley and thus definitely re-balancing the hydrologic and hydraulic arrangement of the entire area, with regards not only to water safety, but also to the overall hydrological balance of countryside and groundwater. In such a redeveloped agricultural landscape, the new rich water system will allow conveying, to the south/west area of the Milan territory, more resources for irrigation thus implementing the contribution of the Villoresi waters.

The fourth action consists of the enhancement of waters resurgent in the fountains, historical target of institutional policies and several maintenance and recovery actions, and subject for detailed investigations. Given the widely changing conditions of their original functions, especially in periurban areas, today fountains are mainly considered as natural heritage. However, it is clear that they have retained their original function of water supply for agriculture; in some areas their capacity allows the practice of an irrigated agriculture would otherwise impossible or subject to groundwater extraction through wells, with significant additional charges for businesses, both in energetic and economic terms. In general, however, the irrigation dependence on springs has been decreasing in time. Recent researches show that this phenomenon is due not only to a greater availability of water and the opportunity of groundwater extraction, but also to the increased dependence of farming activities on the very fountains: indeed, "their hydrological regime is closely linked to agricultural practices and irrigation in particular, and differs depending on territorial peculiarities and particularly on the mutual relationships among surface waters, distributed along several canals (which often overlap and intersect), dripping waters and groundwater extraction" (BISCHETTI ET AL. 2012, 18).

The traditional flow irrigation practices then, thanks to their very low efficiency, are one of the basic feeding factors for many fountains. Given the environmental importance assumed by fountains in recent decades, such as semi-natural valuable ecosystems, as shown by the mentioned researches, such a finding should lead to a careful reflection on the real consequences that the drive to a conversion of traditional irrigation systems to sprinkler systems can have, at least in the areas feeding the fountains.

*Among the current problems of the fountains therefore, we should count not only the state of degradation and abandonment in which they often lay, but also the management of irrigation and even more the reduction of the feeding areas. While, on the one hand, the damage of a poor maintenance can be easily repaired even in short, the elimination of the feeding areas inexorably leads to the disappearance of the springs become inactive and then abandoned, on the contrary, maintaining the ir-*

<sup>10</sup> Among the major transformation projects, particularly noteworthy are: the High-Capacity line Milan-Turin, the accessibility system for Milan Malpensa, the Milan-Mortara Railway, the strengthening of the A4 Milan-Turin, the Abbiategrasso-Bisceglie link road, the Expo 2015 site. Among the enhancement policies: the Navigli Lombardi PTRE ("Piano territoriale regionale d'area", "Area regional territorial plan"), the Project for the Five Towns Park, the Proposed Plan of Urban Belt for South Milan Park, the neo-ruralisation project referred to the RDP (Rural development plan) 2007-2013, the Waterway Dossier Expo 2015, the Walking on water Project, the Rice paddies Park Project, etc..

*rigation use of water by fountain is the best guarantee that it will be constantly cared for. In a perspective view, therefore, the protection of springs can be ensured only by maintaining their feeding areas [...] and by the maintenance that users themselves have a clear interest in ensuring (ibidem, 19).*

The fifth action concerns the reuse of treated water for irrigation purposes. The return of treated water in the city of Milan is, in fact, an important additional resource for agriculture, setting up a practice of excellence at the international level.<sup>11</sup> In particular, the Milan Nosedo plant treats the entire volume of the incoming wastewater for irrigation reuse: the water leaving the treatment plant are used by the Consortium of Vettabbia Canal to irrigate a vast area south-east of the city; likewise, the water treated by the Milan San Rocco plant are intended for irrigation reuse in the district that stretches south of Milan up to the Province of Pavia.

### **3. Starting a neo-ruralisation process in Milan territories**

The five described actions represent the strategic matrix underpinning the process of neo-ruralisation of Milan territories in which local authorities and enterprises are already engaged.

When the City of Milan, becoming leader of the accreditation of the Milan agricultural district, started the path that now allows us to affirm that the Milanese region is gradually regaining the awareness of being an urban/rural metropolis, just few imagined that the strategy of enhancing the agricultural entrepreneurship consolidating its relations with local authorities and settled communities would be successful. Today the local Companies of the Milan rural districts can legitimately claim to be innovative businesses, each one solid and ready to build network to compete in the challenge of ensuring food security and sovereignty, taking care of water and soil as matrices of good life, cooperating with the multiplicity of cultures coexisting in the territorial system to grow together an authentically social agriculture, thus helping to consolidate the centuries-old model of Milanese civilisation, smart, durable and inclusive.

A civilisation which is really 'economic' in the original sense of the term, which refers to 'oikos', the place of production, which producers are linked with as a generator of their identity, 'place' in which the district nature emerges in several fields, weaving in the social fabric of the 'rural town' (or the 'urban countryside') agriculture, business, industry, in the awareness that the quality of places is the crucial factor for the agglomeration of knowledge and skills. The city, in its relationship with the countryside, generates from within a rural district (TOCCACELI 2012) that stems the tendency to 'sprawl', from the perspective of a metropolitan city apt to make the production-consumption circuit, once exogenous, increasingly endogenous, and to interpret 'green economy', in a pioneering way, as an enterprise policy in the broad sense, starting with the empowerment of enterprises that have always been dealing with water, land, energy.

<sup>11</sup> In order to ensure the rational use of water coming from the treatment plants, in January 2006 the City of Milan has signed with the Consortium of Drainage East Ticino-Villoresi an act where the Consortium is committed to act as the sole interlocutor of the user interested to agricultural use of water treated by the Milan San Rocco and Nosedo plants. Other important experiments of reuse for waste water purified by these are now in progress (DE FRAJA FRANGIPANE 2011, 83).

During 2012, the dissemination of such a vision has been strengthening<sup>12</sup> along the advancement of the work set up by the table formed for the development of a urban/rural Milan. The table set up the will to promote a process of negotiated planning for the actions provided by in the strategic plans of the many Milan agricultural districts,<sup>13</sup> also in view of the fact that the Lombardy Region has recognised agricultural soil as common good and that the Regional territorial plan<sup>14</sup> assumes the landscape generated by agricultural activities as a development factor for territories, in the awareness of the vulnerability of production areas in a context where the erosion of agricultural land shows a negative trend of about 15 hectares per day.<sup>15</sup>

The area covered by the Framework arrangement for territorial development at the start, in its broadest sense, is that of the Milanese region identified as the Lambro/Olona hydro-graphic sub-basin in the Po district, as the horizon to be taken into account in order to ensure the effectiveness of ruralisation policies specially related to water and soil, because, as we have already seen, the particular abundance of water - surface water, groundwater and resurgent water - in the central portion of the sub-basin (the springs area corresponding to the landscape unit of the cereal plain) is the main resilience factor of the Milan territorial system. The increasing deterioration and risk of damage<sup>16</sup> of such a valuable territorial heritage, occurred mainly in the twentieth century, determined in 1987 the definition of areas with high risk of environmental crisis for the sub-basin territories. To contrast this tendency to decay, in the last twenty years a number of studies<sup>17</sup> have been produced, negotiated planning processes initiated, policies and instruments of 'governance' of various kinds developed.<sup>18</sup>

<sup>12</sup> Also due to processes related to the Expo 2015 implementation.

<sup>13</sup> Agricultural districts recognised by the Lombardy Region through DGR 8/10085 2009, referred to Regional Law 1 / 23 January 2007, "Tools for the competitiveness of Lombardy enterprises and territories".

<sup>14</sup> Approved by the Regional Council resolution no. 951, 2010.

<sup>15</sup> See the Land consumption agenda: <<http://www.agendadigitale.regione.lombardia.it>> (last visit: March 2013).

<sup>16</sup> As clearly shown in the tables of the Lombardy Region Territorial landscape plan, with waters as main degradation indicators as for qualitative and quantitative aspects.

<sup>17</sup> Such studies were developed starting from the results of the first foundational research published in MAGNAGHI 1995, and continued applying to various contexts of the sub-basin territories and addressing various issues at different scales. See in particular the reports by IReR Lombardy: "Investigation for the identification of quickly feasible pilot projects and experimental tools for documentation and management" 1996, "The fluvial system of North Lambro: Vol. I A heritage to be enhanced for a high environmental quality development, Vol. II Detailed and additional contributions on hydraulic and environmental aspects" 1998; "Techniques and operational tools for the construction of an integrated project - the Vettabbia valley and the Milan treatment system" 2000; "Strategic scenarios for the enhancement of water resources towards the redevelopment of the environmental and territorial system of the Seveso basin" 2001. See also the Strategic document attached as a dossier to the framework agreement of territorial development - Olona river contract - DGR no. 18202 of 19 July 2004, Lombardy Region.

<sup>18</sup> Also: Regional Law 11 March 2005, no. 12, Law for the government of the territory, art. 55bis, "Sub-basin strategic projects" - in particular, the Territorial atlas of the Lambro/Olona sub-basin in the River Po hydro-graphic district, Lombardy Region - ERSAF, 2011, see <<http://www.contrattidifiume.it>> (last visit March 2013). In this study, the Lambro/Olona sub-basin has been divided into four valley areas (Olona, southern Lambro, Seveso-Vettabbia and northern Lambro), to better share "Addresses and Measurements for landscape/environmental redevelopment", as an instrument of good governance of settlement transformations leveraging on water resources.



The project "Milan rural metropolis", pivoting on districts in agriculture, represents a highly innovative model:<sup>19</sup> the district enterprises of Milan, appropriately cooperating with Public governments and, more generally, with the settled community, intend to develop a shared strategy, in the view of setting up a network among farms, distribution platforms, transformers, consumption cooperatives, schools and education agencies (public, private and third sector), social cooperatives providing know-how and employment for farms and other actors which, to a different extent and in different ways, assist the development of an agriculture able, above all, to transform the abundance of well-governed water in good quality food.

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<sup>19</sup> A model of governance: the model of rural agricultural district as a governance instrument has been indirectly recognised at the European level with the European Commission Decision C (2008) 7843 of 10 December 2008, which raised no objections to the granting of state aids for the implementation of the District Contracts (with reference to MIPAAF Decree no. 2850 of 21/4/2008).

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### Abstract

The portion of the Po Valley we usually define as the Milan metropolitan region is a multi-millennial place of human settlements due to the extraordinary abundance of water, and seat of hydraulic civilisations that represent tangible and intangible heritage among the most significant at a global level.

The partial abandonment of agricultural practices, which in the past century has led to a deterioration related to the decay of the continuous monitoring and maintenance of the entire settlement system, currently shows signs of a turnaround: the increasing consolidation of the Milan agricultural districts may certainly be read as an indicator of the persistence of a value attribution to the genuine agricultural tradition of Milan, and brings again in the foreground exactly the need for a new design of its extraordinary water system. It forms the strategic matrix underpinning the process of neo-ruralisation of the Milan territories in which Local authorities and businesses are already engaged.

The project "Milan rural metropolis", pivoting on the districts in agriculture, represents a highly innovative model: the district businesses of Milan, appropriately cooperating with Public governments and, more generally, with the settled community, intend to develop a shared strategy for the development of an agriculture able, above all, to transform the abundance of well-governed water in good quality food.

### Keywords

Milan; Waters; Neo-ruralisation; Agricultural districts; Territorial system.

### Bios

*Mariella Borasio* was born in Biella in October 1943; graduated in Modern literature at the Catholic University of Milan, and achieved a diploma in Landscape architecture at the Milan Applied arts academy in 1967, teaches up to 1994. In 1992 enters the technical-scientific Secretariat appointed by the Lombardy Region to produce Strategic guidelines for the remediation of the Lambro-Seveso-Olona basins area with high risk of environmental crisis; the advisory activity for the Lombardy Region continues until 2012, participating in several research and strategic scenarios development programmes for the enhancement of the assets in the Lambro river system [1998] and in the Chiaravalle Milanese area [1999], for the redevelopment of basins of Lambro,

Seveso [2001], Olona [2004], Mella [2007]. Also for the Lombardy Region, participate in the elaboration of the Guidelines for the Programme "10,000 hectares of new green systems in Lombardy" [2007], as well as in the Governance project "Waters and soil - The Lamber valleys" of [2009], the Territorial atlas of the Lambro/Olona sub-basin in the hydro-graphic district of the river Po - Operational Tool no. 45 of the Territorial Plan of the Lombardy Region [2011] and the Strategic sub-basin project of the torrent Lura [2012]. As Chairman of the Scientific Advisory Board of the District Society for the Milan agricultural rural district [Consortium DAM] she coordinates the elaboration of the Strategic plan for the neo-ruralisation of the Milanese territories, recognised by the Lombardy Region in February 2012.

She is a member of the Scientific Advisory Board of the Lombardy Region Environmental Authority.

*Marco Prusicki* was born in June 1950 in Milan, where he graduated in Architecture at the Polytechnic University and is now Associate professor in Architectural and urban composition at the Civil architecture school. He is the Coordinator of the PhD school in Architectural composition. He has mainly worked on topics related to the landscape regeneration of the Milan and Lombardy territories, developing research and design programmes, several realised. Among them, the project for the Vettabbia park in Milan-Chiaravalle, winner of the Mediterranean landscape award in 2007. Among his writings: "Area Sud Milano. Uno scenario strategico di riqualificazione paesistica del Basso Milanese", in *Loto. Landscape opportunities; La gestione paesistica delle trasformazioni territoriali: complessità territoriale e valorizzazione del paesaggio*, Milano 2006; "Milano: progetto per una 'Darsena nuova'" (with G. Cislighi), in S. Brenna, *La strada Lombarda*, Milano 2010; "La Valle della Vettabbia risorge", in M. Canella, E. Puccinelli (eds.), *La Valle dei Monaci*, Milano 2012.

He is a member of the Scientific Advisory Board of the District Society for the Milan agricultural rural district [Consortium DAM], of the Scientific Advisory Board of the Lombardy Region Environmental Authority, and of the City of Milan Landscape Commission.

